

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) EP 0 841 756 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
28.11.2001 Bulletin 2001/48

(51) Int Cl.7: H04B 1/30, G01R 25/02

(43) Date of publication A2:  
13.05.1998 Bulletin 1998/20

(21) Application number: 97308945.1

(22) Date of filing: 07.11.1997

(84) Designated Contracting States:  
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC  
NL PT SE

(30) Priority: 07.11.1996 US 747022

(71) Applicant: NOKIA MOBILE PHONES LTD.  
02150 Espoo (FI)

(72) Inventors:

- Hyyrylainen, Jari  
02880 Veikkola (FI)
- Ylamurto, Tommi  
02150 Espoo (FI)

(74) Representative: Read, Matthew Charles et al  
Venner Shipley & Co.  
20 Little Britain  
London EC1A 7DH (GB)

(54) An improved correlator circuit for a six-port receiver

(57) A correlator circuit for a six port receiver wherein the received signal is summed with a local oscillator signal at various phase angles and wherein the phase

rotation between the local oscillator and RF signals is carried out separately from the summing of the correlator outputs.

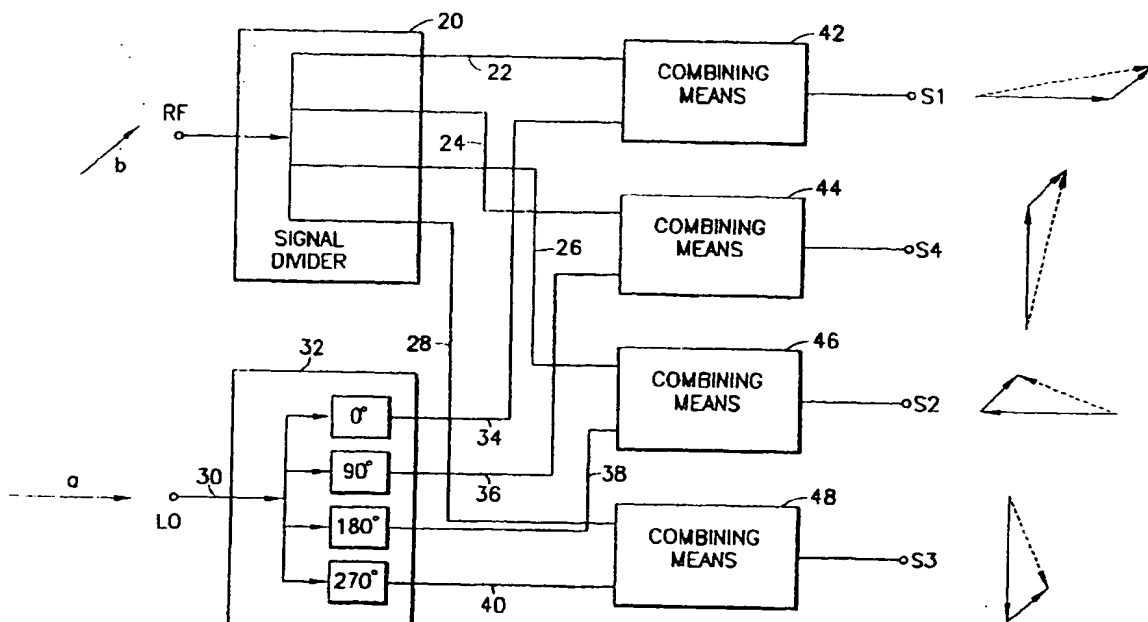


FIG. 3



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 97 30 8945

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 8)
X	EP 0 265 073 A (MARCONI INSTRUMENTS LTD) 27 April 1988 (1988-04-27)	1,8	H04B1/30 G01R25/02
A	* column 3, line 35 - column 5, line 15; figures 1,2 *	2-7	
A	LI J ET AL: "A SIX-PORT DIRECT DIGITAL MILLIMETER WAVE RECEIVER" IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM DIGEST. SAN DIEGO, MAY 23 - 27, 1994, NEW YORK, IEEE, US, vol. 3, 23 May 1994 (1994-05-23), pages 1659-1662, XP000512814 ISBN: 0-7803-1779-3 * the whole document *	1-8	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl. 8)
			H04B G01R
Place of search		Date of completion of the search	Examiner
THE HAGUE		4 October 2001	Andersen, J.G.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone  Y : particularly relevant if combined with another document of the same category  A : technological background  O : non-written disclosure  P : intermediate document</p> <p>T : theory or principle underlying the invention  E : earlier patent document, but published on, or after the filing date  D : document cited in the application  L : document cited for other reasons  &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1500 03/02 (P4601)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 97 30 8945

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

04-10-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0265073 A	27-04-1988	GB 2196745 A	05-05-1988
		AT 73237 T	15-03-1992
		EP 0265073 A1	27-04-1988
		JP 63115070 A	19-05-1988
		US 4777429 A	11-10-1988

EPO FORM P0489

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82